



**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT**

**APPLICATION FOR HCAI SPECIAL SEISMIC  
CERTIFICATION PREAPPROVAL (OSP)**

OFFICE USE ONLY

**APPLICATION #: OSP-0846**

**HCAI Special Seismic Certification Preapproval (OSP)**

Type:  New  Renewal

**Manufacturer Information**

Manufacturer: Vertiv Corporation

Manufacturer's Technical Representative: Julian Freeman

Mailing Address: 975 Pittsburgh Drive, Delaware, OH 43015

Telephone: (740) 833-8910 Email: julian.freeman@vertiv.com

**Product Information**

Product Name: APM2 FR3 & FR4 UPS

Product Model Number(s): Varies. See Attachment

Product Category: UPS and Batteries

Product Sub-Category: UPS

General Description: Uninterruptible Power Supply with Lithium-Ion or VRLA Batteries and External Battery Cabinets

Mounting Description: Base Mounted Rigid -

Tested Seismic Enhancements: None

**Applicant Information**

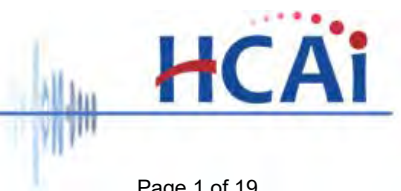
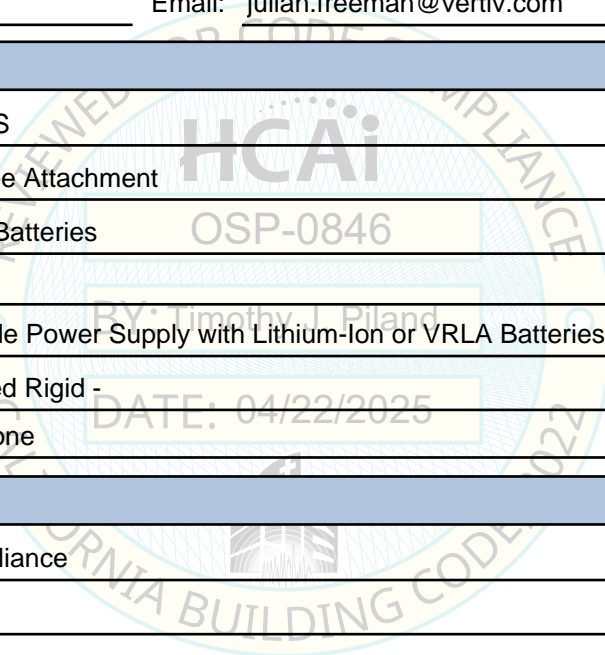
Applicant Company Name: Pre Compliance

Contact Person: Galen Reid

Mailing Address: 36 SW Wall Street, Bend, OR 97702

Telephone: (541) 241-2310 Email: galen@go-pre.com

Title: Principal & Program Manager





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT**

**California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)**

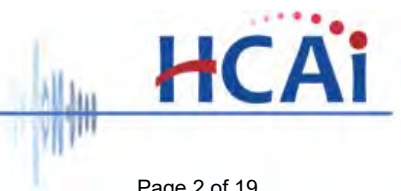
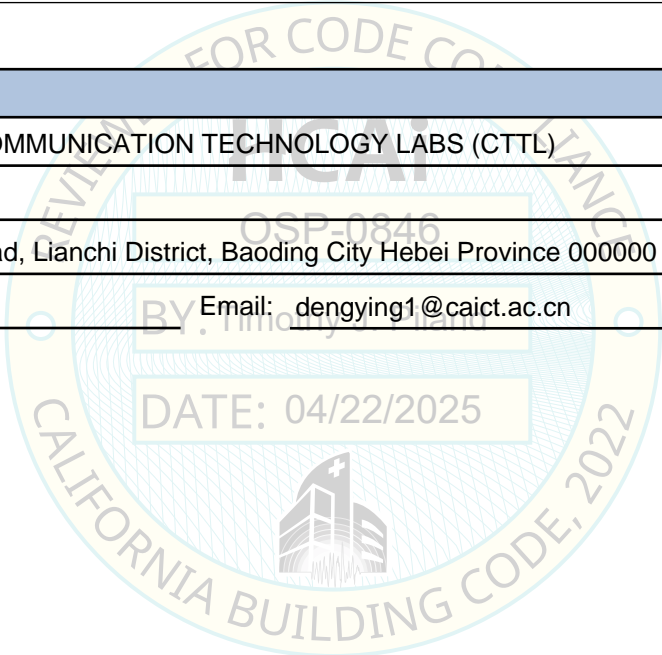
Company Name: PRE COMPLIANCE  
Name: Andrew Coughlin California License Number: S6082  
Mailing Address: 36 SW Wall Street, Bend, OR 97702  
Telephone: (415) 635-8461 Email: Andy@go-pre.com

**Certification Method**

GR-63-Core     ICC-ES AC156     IEEE 344     IEEE 693     NEBS 3  
 Other (Please Specify): \_\_\_\_\_

**Testing Laboratory**

Company Name: CHINA TELECOMMUNICATION TECHNOLOGY LABS (CTTL)  
Contact Person: Ying Deng  
Mailing Address: 299 Tengfei Road, Lianchi District, Baoding City Hebei Province 000000  
Telephone: (8603) 126-7989 Email: dengying1@caict.ac.cn





**DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION  
OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT**

**Seismic Parameters**

Design Basis of Equipment or Components ( $F_p/W_p$ ) = 0.72 at z/h=0; 1.21 at z/h=1

SDS (Design spectral response acceleration at short period, g) = 1.61 at z/h=1; 1.61 at z/h=0

$a_p$  (Amplification factor) = 2.5

$R_p$  (Response modification factor) = 6.0

$\Omega_0$  (System overstrength factor) = 2.0

$I_p$  (Importance factor) = 1.5

z/h (Height ratio factor) = 1 and 0

Natural frequencies (Hz) = See Attachment

Overall dimensions and weight = See Attachment

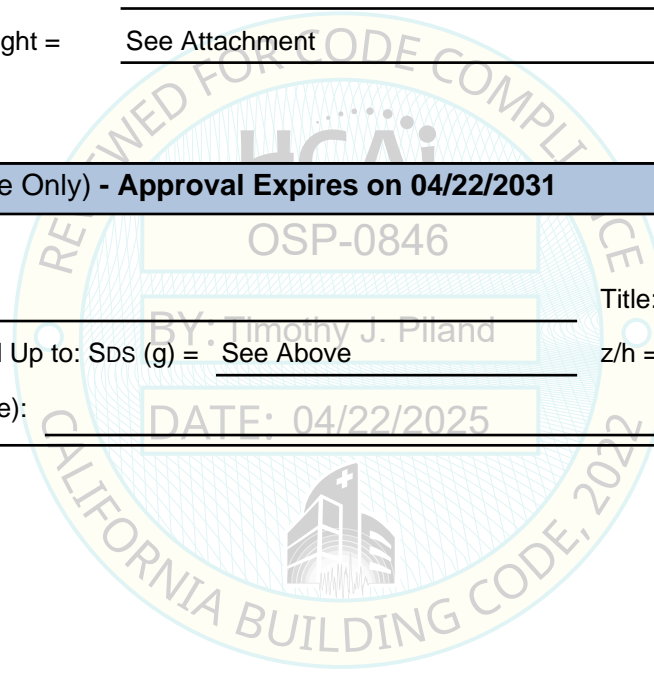
**HCAI Approval (For Office Use Only) - Approval Expires on 04/22/2031**

Date: 4/22/2025

Name: Timothy Piland Title: Senior Structural Engineer

Special Seismic Certification Valid Up to: SDS (g) = See Above z/h = See Above

Condition of Approval (if applicable): DATE: 04/22/2025



**Manufacturer:** Vertiv Corporation  
**Product Type:** UPS  
**Model Line:** APM2

**Seismic Parameters**

$S_{DS} = 1.61g$  for  $z/h=1$   $I_p = 1.5$   
 $S_{DS} = 1.61g$  for  $z/h=0$

**Building Codes**

**CBC 2022**

## TABLE 1

**Mounting Configuration: Base Mounted - Rigid**

**Construction Summary**

Carbon steel framing and cladding

**Options Summary**

See Model Numbering Nomenclature

Model Line	Model	Max. Dimensions (in)			Max Wt. (lb)	Notes	UUT
		D	W	H			
APM2 FR3 UPS	APM2 FR3 208V	40.6	23.6	78.7	1085	without switch	1
	APM2 FR3 208V	40.6	23.6	78.7	1129	with 4 switches	Interp.
	APM2 FR3 400/415V	40.6	23.6	78.7	1129		Interp.
	APM2 FR3 480V	40.6	23.6	78.7	1129		2
APM2 FR4 UPS	APM2 FR4 400/415V	40.6	47.2	78.7	2233		Interp.
	APM2 FR4 480V	40.6	47.2	78.7	2233		3
APM2 208V Battery Cabinet	EBC 208V 600mm	40.1	24.0	78.7	2478		Interp.
	EBC 208V 880mm	40.1	35.0	78.7	3322		Interp.
APM2 480V Battery Cabinet	EBC 480V 880mm	40.1	35.0	78.7	2963		4
	EBC 480V 1200mm	40.1	47.4	78.7	5432		5

**Manufacturer:** Vertiv Corporation  
**Product Type:** UPS  
**Model Line:** APM2

**Seismic Parameters**

$S_{DS} = 1.61g$  for  $z/h=1$        $I_p = 1.5$   
 $S_{DS} = 1.61g$  for  $z/h=0$

**Building Codes**

**CBC 2022**

## UPS Model Nomenclature

Placeholder	Description	Digit(s)	Option
1-2	Product Line	56	APM2
3	System Type	S	SMS (Single Module System)
		M	MMS (Multi Module System)
4	Voltage and Wiring	C	208V 4-wire
		Y	220V 4-wire
		M	380V 4-wire
		T	400V 4-wire
		E	415V 4-wire
		A	480V 3-wire
		O	480V 4-wire
		010	010
5-7	Maximum Nameplate Rating (kVA,kW)	015	015
		020	020
		025	025
		030	030
		040	040
		045	045
		050	050
		060	060
		075	075
		080	080
		090	090
		100	100
		120	120
		140	140
		150	150
		180	180
		200	200
		225	225
		240	240
		250	250
300	300		
360	360		
400	400		



# SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Pre No. CC241634-01-R0

**Manufacturer:** Vertiv Corporation  
**Product Type:** UPS  
**Model Line:** APM2

### Seismic Parameters

$S_{DS} = 1.61g$  for  $z/h=1$        $I_p = 1.5$   
 $S_{DS} = 1.61g$  for  $z/h=0$

### Building Codes

**CBC 2022**

## UPS Model Nomenclature

Placeholder	Description	Digit(s)	Option
5-7	Maximum Nameplate Rating (kVA,kW)	420	420
		480	480
		500	500
		540	540
		600	600
		8	Configured Rating (kVA,kW)
B	015		
C	020		
D	025		
E	030		
F	040		
G	045		
H	050		
J	060		
K	075		
L	080		
M	090		
N	100		
P	120		
Q	140		
R	150		
S	180		
T	200		
U	225		
V	240		
W	250		
X	300		
Y	360		
Z	400		
1	420		
2	480		
3	500		
4	540		
5	600		



**Manufacturer:** Vertiv Corporation  
**Product Type:** UPS  
**Model Line:** APM2

**Seismic Parameters**

$S_{DS} = 1.61g$  for  $z/h=1$        $I_p = 1.5$   
 $S_{DS} = 1.61g$  for  $z/h=0$

**Building Codes**

**CBC 2022**

## UPS Model Nomenclature

Placeholder	Description	Digit(s)	Option
9	Redundant Power Mode	N	None
		R	One Redundant Module
10	UPS Battery Modules	N	None
		A	Two (2) VRLA
		B	Four (4) VRLA
		C	Six (6) VRLA
		D	Eight (8) VRLA
		E	Ten (10) VRLA
		F	Twelve (12) VRLA
		G	Fourteen (14) VRLA
		H	Sixteen (16) VRLA
		J	One (1) Lithium Ion
		K	Two (2) Lithium Ion
		L	Three (3) Lithium Ion
		M	Four (4) Lithium Ion
P	Five (5) Lithium Ion		
Q	Six (6) Lithium Ion		
R	Seven (7) Lithium Ion		
S	Eight (8) Lithium Ion		
11	Maintenance Bypass Breakers	N	None
		4	Internal Bypass Breakers- Four (4)
		3	Internal Bypass Breakers- Three (3)
12	Internal Options	N	None
		D	DC Ground Fault Detection
13-15	Factory Digits	000	Randomized Unique Alphanumerical

**Manufacturer:** Vertiv Corporation  
**Product Type:** UPS  
**Model Line:** APM2

**Seismic Parameters**

$S_{DS} = 1.61g$  for  $z/h=1$        $I_p = 1.5$   
 $S_{DS} = 1.61g$  for  $z/h=0$

**Building Codes**

**CBC 2022**

## 208V EBC Model Nomenclature

Placeholder	Description	Digit(s)	Option
1-2	Product Line	56	APM2
3-4	Battery Pack Type	BP	No Monitoring
5	Rating (kVA)	A	10
		B	15
		C	20
		D	25
		E	30
		F	40
		G	45
		H	50
		J	60
		K	75
		L	80
		M	90
		6-7	Battery Model
P	120		
Q	140		
R	150		
01	No Battery 600 Frame (Digit 8=6)		
02	No Battery 600 Frame (Digit 8=7)		
03	No Battery 880 Frame (Digit 8=8)		
04	No Battery 880 Frame (Digit 8=9)		
HX	EnerSys HX150E-FR		
MX	EnerSys HX205-FR		
PX	EnerSys HX300-FR		
RX	EnerSys HX330-FR		
UX	EnerSys HX400-FR		
WX	EnerSys HX505-FR		
XX	EnerSys HX540-FR		
YX	EnerSys XE 760-FR		
ZX	EnerSys XE 1040-FR		
8	DC Breaker Rating (kVA)	6	400A (600MM)
		7	400A (600MM)





# SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Pre No. CC241634-01-R0

**Manufacturer:** Vertiv Corporation  
**Product Type:** UPS  
**Model Line:** APM2

**Seismic Parameters**  
 $S_{DS} = 1.61g$  for  $z/h=1$        $I_p = 1.5$   
 $S_{DS} = 1.61g$  for  $z/h=0$

**Building Codes**  
**CBC 2022**

## 208V EBC Model Nomenclature

Placeholder	Description	Digit(s)	Option
8	DC Breaker Rating (kVA)	8	600A (880MM)
		9	600A (880MM)
9	Number of Cabinets In System	1	1 Cabinet
		2	2 Cabinets
		3	3 Cabinets
		4	4 Cabinets
		L	Left Side FR1 UPS
10	Mounting Location	M	Left Side FR3 UPS
		S	Stand Alone
		C	Stand Alone System
		1	Position #1
11	Battery Cabinet Position	2	Position #2
		3	Position #3
		4	Position #4
		0	None
12	Options		
13-15	Factory Digits	000	Randomized Unique Alphanumerical



# SPECIAL SEISMIC CERTIFICATION CERTIFIED COMPONENTS

Pre No. CC241634-01-R0

**Manufacturer:** Vertiv Corporation  
**Product Type:** UPS  
**Model Line:** APM2

### Seismic Parameters

$S_{DS} = 1.61g$  for  $z/h=1$        $I_p = 1.5$   
 $S_{DS} = 1.61g$  for  $z/h=0$

### Building Codes

CBC 2022

## 480V EBC Model Nomenclature

Placeholder	Description	Digit(s)	Option
1-2	Product Line	56	APM2
3-4	Battery Pack Type	BP	No Monitoring
5	Rating (kVA)	C	020
		E	030
		F	040
		H	050
		J	060
		L	080
		M	090
		N	100
		P	120
		R	150
		S	180
		T	200
		U	225
		V	240
		W	250
		X	300
		Y	360
		Z	400
		1	420
		2	480
3	500		
4	540		
5	600		
6-7	Battery Model	No	No Battery 880 Frame
		01	No Battery 880 Frame
		02	No Battery 1200 Frame
		03	No Battery 1200 Frame
		04	No Battery 1200 Frame
		05	No Battery 1200 Frame
		HX	EnerSys HX150E-FR
		MX	EnerSys HX205-FR

**Manufacturer:** Vertiv Corporation  
**Product Type:** UPS  
**Model Line:** APM2

**Seismic Parameters**

$S_{DS} = 1.61g$  for  $z/h=1$        $I_p = 1.5$   
 $S_{DS} = 1.61g$  for  $z/h=0$

**Building Codes**

**CBC 2022**

## 480V EBC Model Nomenclature

Placeholder	Description	Digit(s)	Option
6-7	Battery Model	PX	EnerSys HX300-FR
		RX	EnerSys HX330-FR
		UX	EnerSys HX400-FR
		WX	EnerSys HX505-FR
		XX	EnerSys HX540-FR
		YX	EnerSys XE 760-FR
		ZX	EnerSys XE 1040-FR
8	Breaker	A	400 x 36 Jar 880MM
		B	400A x 36 Jar 880MM
		G	600A 40 Jar 1200MM
		H	600A x 40 Jar 1200MM
		K	600A x 40 Jar 1200MM
9	Number of Cabinets In System	1	1 Cabinet
		2	2 Cabinets
		3	3 Cabinets
		4	4 Cabinets
10	Mounting Location	L	Left Side FR1 UPS
		M	Left Side FR3 UPS
		S	Stand Alone
		C	Stand Alone System
		R	Right Side
11	Battery Cabinet Position	1	Position #1
		2	Position #2
		3	Position #3
		4	Position #4
12	Options	0	None
13-15	Factory Digits	000	Randomized Unique Alphanumerical

**Manufacturer:** Vertiv Corporation  
**Product Type:** UPS  
**Model Line:** APM2

**Seismic Parameters**

$S_{DS} = 1.61g$  for  $z/h=1$        $I_p = 1.5$   
 $S_{DS} = 1.61g$  for  $z/h=0$

**Building Codes**

**CBC 2022**

## TABLE 2

Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
Power Module (Vertiv)	PM60-D	Function Module,APM 0600kTK56FN02Z1-60kVAPower Module-PM60-D		1,2,3
Battery Modules (EnerSys)	12HX300-FR	Valve-regulated sealed lead-acid battery		4
	12HX540-FR	Valve-regulated sealed lead-acid battery		5
Centralized control module (Vertiv)	APM 0600kCMS01	Centralized control module		1,2,3
Functional Module (Vertiv)	APM 0600kMK16FN02SZ3	Functional module		1,2,3
Circuit Breaker (ABB)	XT5H 600 Ekip Dip LS/I 600 3p FF UL /CSA + Acc	MCB 600A 3P XT5HQ360BEFF000XXX 600VAC UL /CSA ACC (VTC: 16029963)		2
Circuit Breakers (LS)	UTS400HT ATU 400A 3P UL	400A Adjustable thermal-magnetic trip circuit breaker		4
	UTS600HT ATU 600A 3P UL	600A Adjustable thermal-magnetic trip circuit breaker		5
Breaker Auxiliary Contacts (LS)	A,AX,UTS150~UTS600	LS Auxiliary Switch UTS 250A, 400A ,600A Frame		4,5
Breaker Shunt Release (LS)	T,SHT,T,AC/DC24V,UTS150~UTS600	LS 24VDC Shunt Trip UTS 250A, 400A, 600A Frame		4,5
Hall Sensor (LEM)	HAT 800-S	Hall Current Sensor		4,5
Battery Gnd Fault Option APM2 UPS Frame 3 (Vertiv)	APM 0150KTE46FN02Z500	APM2 FR3 DC GND FAULT KIT 02313905		1,2,3
Upper Exhaust Fan (Airflow Electric Appliances Co., Ltd.)	A2E250S-5KN-AE6H	Axial Fan		1,2



# SPECIAL SEISMIC CERTIFICATION CERTIFIED SUBCOMPONENTS

Pre No. CC241634-01-R0

**Manufacturer:** Vertiv Corporation  
**Product Type:** UPS  
**Model Line:** APM2

### Seismic Parameters

$S_{DS} = 1.61g$  for  $z/h=1$        $I_p = 1.5$   
 $S_{DS} = 1.61g$  for  $z/h=0$

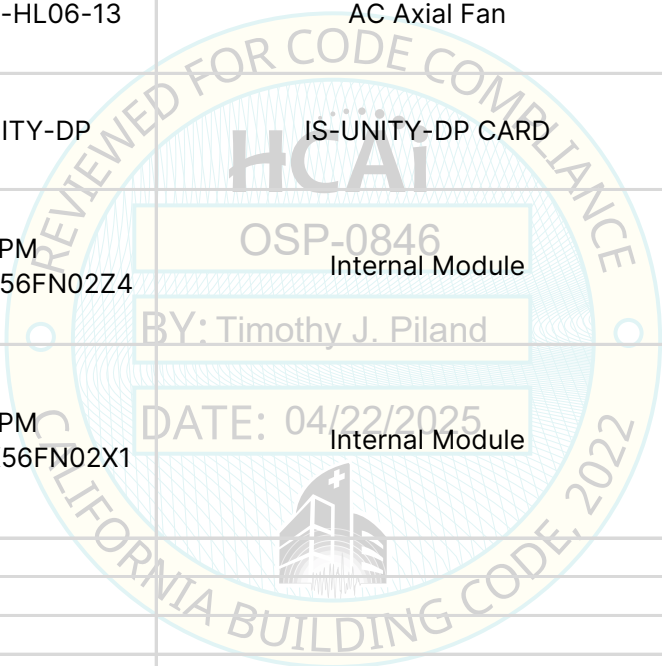
### Building Codes

CBC 2022

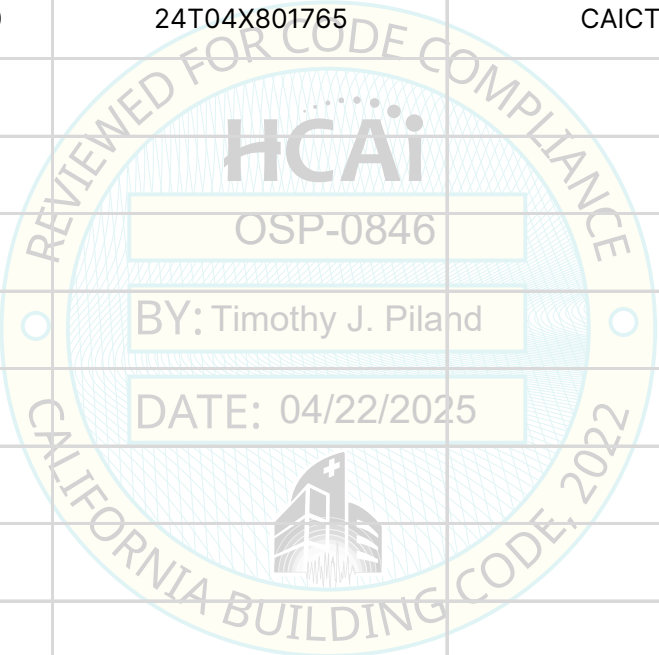
## TABLE 2

### Table Description: Electrical Components

Component (Manufacturer)	Model	Description	Notes	UUT
Upper Exhaust Fan (EBM)	W2E250-HL06-13	AC Axial Fan		3
IS-UNITY-DP CARD (Jabil Circuit)	IS-UNITY-DP	IS-UNITY-DP CARD		1,2,3
Lead-acid acquisition module (Vertiv)	APM 0600kTK56FN02Z4	OSP-0846 Internal Module		4,5
Lead-acid acquisition module docking board (Vertiv)	APM 0600kTK56FN02X1	Internal Module		4,5



UUT	Model	Test Report	Test Laboratory	S <sub>DS</sub>	z/h	I <sub>p</sub>
1	56SC150RNNNN000	24B02X801517	CAICT	1.93 1.93	1 0	1.5
2	56SO300XNN4N000	24T04X801744	CAICT	1.93 1.93	1 0	1.5
3	56SO6005NNNN000	24B02X801518	CAICT	1.93 1.93	1 0	1.5
4	56BPPPXB4C40000	24T04X802160	CAICT	1.61 1.61	1 0	1.5
5	56BP5XXK1S10000	24T04X801765	CAICT	1.61 1.61	1 0	1.5



Notes:



## UUT 1

Test Report# 24B02X801517

**Manufacturer:** Vertiv Corporation  
**Model Line:** APM2  
**Model Number:** 56SC150RNNNN000  
**Serial Number:** N/A

Highest Passed Test Level						
S <sub>DS</sub>	z/h	I <sub>p</sub>	A <sub>flx-h</sub>	A <sub>rig-h</sub>	A <sub>flx-v</sub>	A <sub>rig-v</sub>
1.93	1	1.5	3.09	2.32	1.29	0.52
1.93	0					

Dimensions/Weights			
Depth (in)	Width (in)	Height (in)	Weight (lbs.)
40.6	23.6	78.7	1085

Lowest Natural Frequency (Hz)		
Front-Back	Side-Side	Vertical
14.84	7.03	23.05

Building Codes	Test Criteria	Construction/Option Summary
CBC 2022	ICC-ES AC156	Carbon steel frame and cladding

UUT Mounting Details:	List of Included Subcomponents
-----------------------	--------------------------------



Description	Model #
Frame	56SC150RNNNN000
Power Module	PM60-D
Centralized control module	APM 0600kCMS01
Functional modules	APM 0600kMK16FN02SZ3
Fuse	RS306-2-S1P-1000A690V
Battery Gnd Fault Option	APM
APM2 UPS Frame 3	0150KTE46FN02Z5000
Upper exhaust fan	A2E250S-5KN-AE6H
IS-UNITY-DP CARD	IS-UNITY-DP

UUT was rigid base mounted to the table using seismic brackets 605360P1 (front), 606507P1 (rear), and 606504P1 (rear channel) with (8) Grade 8.8 M12 bolts.  
 Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

# SPECIAL SEISMIC CERTIFICATION UUT SUMMARY

## UUT 2

Test Report# 24T04X801744

**Manufacturer:** Vertiv Corporation  
**Model Line:** APM2  
**Model Number:** 56SO300XNN4N000  
**Serial Number:** N/A

Highest Passed Test Level						
S <sub>DS</sub>	z/h	I <sub>p</sub>	A <sub>flx-h</sub>	A <sub>rig-h</sub>	A <sub>flx-v</sub>	A <sub>rig-v</sub>
1.93	1					
1.93	0	1.5	3.09	2.32	1.29	0.52

Dimensions/Weights			
Depth (in)	Width (in)	Height (in)	Weight (lbs.)
40.6	23.6	78.7	1129

Lowest Natural Frequency (Hz)		
Front-Back	Side-Side	Vertical
12.49	4.69	22.66

Building Codes
CBC 2022

Test Criteria
ICC-ES AC156

Construction/Option Summary
Carbon steel frame and cladding

### UUT Mounting Details:



UUT was rigid base mounted to the table using seismic brackets 605360P1 (front), 606507P1 (rear), and 606504P1 (rear channel) with (8) Grade 8.8 M12 bolts. Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

### List of Included Subcomponents

Description	Model #
Frame	56SO300XNN4N000
Power Module	PM60-D
Centralized control module	APM 0600kCMS01
Functional modules	APM 0600kMK16FN02SZ3
Fuse	RS306-2-S1P-1000A690V
Circuit Breaker	XT5H 600 Ekip Dip LS/I 600 3p FF UL /CSA + Acc
Battery Gnd Fault Option	APM
APM2 UPS Frame 3	0150KTE46FN02Z5000
Upper exhaust fan	A2E250S-5KN-AE6H
IS-UNITY-DP CARD	IS-UNITY-DP

## UUT 3

Test Report# 24B02X801518

**Manufacturer:** Vertiv Corporation  
**Model Line:** APM2  
**Model Number:** 56SO6005NNNN000  
**Serial Number:** N/A

Highest Passed Test Level						
S <sub>DS</sub>	z/h	I <sub>p</sub>	A <sub>flx-h</sub>	A <sub>rig-h</sub>	A <sub>flx-v</sub>	A <sub>rig-v</sub>
1.93	1					
1.93	0	1.5	3.09	2.32	1.29	0.52

Dimensions/Weights			
Depth (in)	Width (in)	Height (in)	Weight (lbs.)
40.6	47.2	78.7	2233

Lowest Natural Frequency (Hz)		
Front-Back	Side-Side	Vertical
13.29	9.77	23.05

Building Codes	Test Criteria	Construction/Option Summary
CBC 2022	ICC-ES AC156	Carbon steel frame and cladding

### UUT Mounting Details:



UUT was rigid base mounted to the table using seismic brackets 605360P1 (front), 606507P1 (rear), and 60163572P1 (rear channel) with (15) Grade 8.8 M12 bolts.  
Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

### List of Included Subcomponents

Description	Model #
Frame	56SO6005NNNN000
Power Module	PM60-D
Centralized control module	APM 0600kCMS01
Functional modules	APM 0600kMK16FN02SZ3
Fuse	170M6621
Battery Gnd Fault Option	APM
APM2 UPS Frame 3	0150KTE46FN02Z5000
Upper exhaust fan	W2E250-HL06-13
IS-UNITY-DP CARD	IS-UNITY-DP





## UUT 5

Test Report# 24T04X801765

**Manufacturer:** Vertiv Corporation  
**Model Line:** APM2  
**Model Number:** 56BP5XXK1S10000  
**Serial Number:** N/A

Highest Passed Test Level						
S <sub>DS</sub>	z/h	I <sub>p</sub>	A <sub>flx-h</sub>	A <sub>rig-h</sub>	A <sub>flx-v</sub>	A <sub>rig-v</sub>
1.61	1					
1.61	0	1.5	2.58	1.93	1.08	0.43

Dimensions/Weights			
Depth (in)	Width (in)	Height (in)	Weight (lbs.)
40.1	47.4	78.7	5432

Lowest Natural Frequency (Hz)		
Front-Back	Side-Side	Vertical
5.87	4.3	19.93

**Building Codes**

CBC 2022

**Test Criteria**

ICC-ES AC156

**Construction/Option Summary**

Carbon steel frame and cladding

**UUT Mounting Details:**



UUT was rigid base mounted to the table using seismic brackets 605360P1 (front), 606504P1 (rear), and 608689P1 (rear channel) with (15) Grade 8.8 M12 bolts.  
 Unit maintained structural integrity and remained operational per manufacturer requirement following shake table test. All contents were included in the unit per operating conditions.

**List of Included Subcomponents**

Description	Model #
Breaker Auxiliary Contacts	A,AX,UTS150~UTS600
Breaker Shunt Release	T,SHT,T,AC/DC24V,UTS150~UTS600
Hall Sensor	HAT 800-S
Lead-acid acquisition module	APM 0600kTK56FN02Z4
Lead-acid acquisition module docking board	APM 0600kTK56FN02X1
Battery Module	12HX540-FR
Circuit Breaker	UTS600HT ATU 600A 3P UL